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*Commonwealth of Virginia, ex rel. State Corporation Commission Ex Parte:
In the matter of establishing regulations for a shared solar program
pursuant to § 56-594.3 of the Code of Virginia
Case No. PUR-2020-00125*

Dear Mr. Logan:

Please find enclosed for electronic filing in the above-captioned proceeding Testimony and Exhibits of Virginia Electric and Power Company. This filing is being made pursuant to Ordering Paragraph (13) of the Commission's July 23, 2021 Order for Notice and Hearing, which states that the Company may file "any testimony and exhibits by which it expects to establish its case regarding the [minimum bill] Proposal and bill credit rate."

Please do not hesitate to contact me if you have any questions in regard to the enclosed.

Highest regards,

/s/ Jontille D. Ray

Jontille D. Ray

Enclosures

cc: David J. DePippo, Esq.
Joseph K. Reid, III, Esq.
Timothy D. Patterson, Esq.
Service List

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Robert J. Trexler

Title: Director – Regulation

Summary:

Mr. Trexler's testimony presents the Company's proposal for (1) establishing the bill credit rate to be used in the Shared Solar Program ("Program"); and (2) the Company's minimum bill proposal for the Program. His testimony also seeks the Commission's approval of its proposal to recover the costs of serving low-income customers through the Fuel Factor since these customers are exempted by statute from paying the minimum bill.

With respect to the bill credit rate methodology, the Company proposes to use the total revenues and sales from FERC Form 1 for the Virginia jurisdiction. The revenue and sales by rate class data derived from FERC Form 1 would provide the relevant information to the Commission in a timely manner, and mirrors the methodology adopted by the Commission to determine the bill credit rate in the Multi-Family Shared Solar Program (PUR-2020-00124).

Mr. Trexler explains that the Company's rationale for its minimum bill proposal is to ensure that participating customers pay their share of the costs associated with their electric services they will continue to receive from the Company, including use of delivery infrastructure, generation balancing services, and administrative and billing support, even as they receive credits for electricity generated in the Program. Accordingly, the Company proposes to apply a minimum bill against subscribers' shared solar bill credit in each billing period to include the following components:

- Delivery Charge: This charge captures the costs of using Company transmission and distribution infrastructure to deliver electricity to customers. It is calculated by taking the average delivery charges based upon revenues and sales from FERC Form 1 for the Virginia jurisdiction.
- Generation Balancing Service Charge: This charge accounts for the Company's cost of providing generation supply to ensure customers receive continuous electric service. It is calculated by netting average generation service costs (including non-bypassable charges) against the subscriber's avoided cost benefit.
- Administrative Charge: This charge captures the costs of technology development, workforce expansion, and billing preparation and coordination services, among others, necessary to support the Program. This component is still in development.

For each component of the proposed minimum bill, the Company would multiply the rates identified by the kWh of the subscription that is used to calculate the bill credit for the period. The estimated typical minimum bill, excluding Administrative Charges, for a residential customer assuming a 1,000 kWh subscription, is \$74.28.

**DIRECT TESTIMONY
OF
ROBERT J. TREXLER
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2020-00125**

1 **Q.** Please state your name, business address, and position of employment with Virginia
2 Electric and Power Company (“Dominion Energy Virginia” or the “Company”).

3 **A.** My name is Robert J. Trexler, and my business address is 120 Tredegar Street,
4 Richmond, Virginia 23219. I am Director of Regulation for the Company. A statement
5 of my background and qualifications is attached as Appendix A.

6 **Q.** What are your responsibilities as Director of Regulation?

7 **A.** I lead the team that is responsible for the Company’s electric rate-related activities
8 involving implementation of customer rates. I also have the responsibility for the
9 development and administration of contracts with special contract customers and non-
10 jurisdictional customers, and for responding to customer requests concerning their
11 electric rates. Accordingly, I often work directly with customers who are actively
12 considering alternative rate design and alternatives for renewable energy.

13 **Q.** What is the purpose of your testimony in this case?

14 **A.** I am presenting testimony in support of (1) the Company’s proposal for establishing the
15 bill credit rate methodology to be used in the Shared Solar Program; and (2) the
16 Company’s Minimum Bill Proposal for the Shared Solar Program (“Program”).
17 Relatedly, the Company seeks the Commission’s approval of its proposal to recover its
18 costs of serving low-income customers through the Fuel Factor since these customers are
19 exempted by statute from paying the minimum bill. For reasons discussed herein, and in

1 light of the Commission's precedent and guidance in the Multi-Family Shared Solar
2 Program proceeding,¹ the Company has modified its minimum bill proposal from its
3 previous filings in this docket.

4 **Q. How is your testimony organized?**

5 A. My testimony addresses each of the two primary topics identified for determination by
6 the State Corporation Commission of Virginia ("Commission") in its July 23, 2021 Order
7 for Notice and Hearing in this proceeding—the bill credit rate methodology and the
8 minimum bill proposal. My testimony is organized as follows:

9 I. Bill Credit Rate Methodology

10 II. Minimum Bill Proposal

11 **Q. Can you briefly describe the Shared Solar Program?**

12 A. Yes. Virginia Code § 56-594.3 (the "Shared Solar Statute" or the "Statute") provides the
13 statutory framework for the Program and establishes the mechanism under which a
14 subscriber may purchase a portion of the output of a shared solar facility, and then
15 receive a bill credit on their electric bill to offset incurred charges of their electric service.
16 Fundamentally, the Shared Solar Program acts as a companion to a subscriber's principal
17 tariff. This means that subscribers will continue to purchase their electric service from
18 the Company in accordance with their individual, Commission-approved principal tariff,
19 just as any similarly situated non-Program participant customer. The only difference is
20 that a subscriber will receive a credit on their bill for this companion service under the

¹ *Commonwealth of Virginia, ex rel: State Corporation Commission, Ex Parte: In the matter of establishing regulations for a multi-family shared solar program pursuant to § 56-585.1:12 of the Code of Virginia, Case No. PUR-2020-00124, Order (June 29, 2021).*

1 Program. Consistent with this construct, the Statute provides that each subscriber shall
2 pay a minimum bill.

3 **I. BILL CREDIT RATE METHODOLOGY**

4 **Q. In the context of the Shared Solar Program, what is a “bill credit” and a “bill credit**
5 **rate?”**

6 A. Virginia Code § 56-594.3 A defines a “bill credit” as “the monetary value of the
7 electricity, in kilowatt-hours, generated by the shared solar facility allocated to a
8 subscriber to offset that subscriber’s electricity bill.” The Shared Solar Statute states that
9 “a utility shall provide a bill credit for the proportional output of a shared solar facility
10 attributable to that subscriber” It goes on to say that “[t]he value of the bill credit
11 for the subscriber shall be calculated by multiplying the subscriber’s portion of the
12 kilowatt-hour electricity production from the shared solar facility by the applicable bill
13 credit rate for the subscriber.”

14 The “applicable bill credit rate” is “the dollar-per-kilowatt-hour rate used to calculate the
15 subscriber’s bill credit.” The bill credit is the vehicle by which subscribers receive the
16 monetary benefit of their shared solar facility’s generation, and the bill credit rate
17 establishes how much monetary benefit should be given to subscribers for a given
18 amount of electric generation. In Subsection C, the Shared Solar Statute states that
19 “[e]ach class’s applicable bill credit rate shall be calculated by the Commission annually
20 by dividing revenues to the class by sales, measured in kilowatt-hours, to that class to
21 yield a bill credit rate for the class (\$/kWh).” The Statute leaves it to the Commission to
22 set a particular rate.

1 **Q. How is the bill credit rate to be established?**

2 A. In short, the Commission is charged with establishing the bill credit rate and has elected
3 to do so through the hearing process in this proceeding.

4 Rule 80, as adopted, states simply that “[t]he bill credit shall be calculated in accordance
5 with 20 VAC 5-340-60 F and § 56-594.3 C of the Code of Virginia.” Rule 60 F 4 states
6 that “[t]he Commission shall establish the yearly applicable bill credit rate for the
7 subscriber’s residential, commercial, or industrial rate class.” In its Order for Notice and
8 Hearing in this proceeding, the Commission stated:

9 [S]ince the Order Adopting Rules provided that the Commission shall
10 establish the annual bill credit rate for the subscriber’s rate class but did
11 not specify the methodology for establishing the bill credit rate, we find
12 that the hearing we set herein should also consider the methodology to be
13 used to establish the bill credit rate, and the resulting bill credit for each
14 customer class produced by this methodology, for the Shared Solar
15 Program.

16 **Q. What is the Company’s proposed bill credit rate methodology for the Shared Solar
17 Program?**

18 A. The Company proposes to use the total revenues and sales from FERC Form 1, for the
19 Virginia jurisdictional revenue classes. The revenues and sales by rate class data derived
20 from FERC Form 1 would provide the relevant information to the Commission in a
21 timely manner. The Company reports the Virginia information from FERC Form 1 to the
22 Commission by March 31 of each year. As part of this filing, the Company can provide
23 jurisdictionalized revenues and sales data by revenue class and a calculation of the
24 applicable bill credit rate for the Program.

1 Additionally, in its June 29, 2021 Order in the Multi-Family Shared Solar Program
2 docket, the Commission found that “because the FERC Form 1 is more timely and
3 provides data by jurisdiction, and because both Dominion and KU-ODP submit Virginia-
4 specific FERC Form 1 information to the Commission each March, using the FERC
5 Form 1 data to calculate the bill credit rate is preferable.” To ensure consistency in the
6 administration of the Multi-Family and Shared Solar Programs, the Company encourages
7 the Commission to adopt this bill credit rate methodology for the Shared Solar Program
8 as well.

9 **Q. Is this a change from what the Company has previously proposed?**

10 A. Yes. The Company believes that methodological consistency between the Shared Solar
11 and Multi-Family cases is of primary importance. Accordingly, in light of the
12 Commission’s decision in the Multi-Family Shared Solar proceeding that FERC Form 1
13 data should be used to determine the bill credit rate, the Company believes it would be
14 reasonable to utilize the same information in the Shared Solar Program.

15 **III. MINIMUM BILL PROPOSAL**

16 **A. Legal Framework**

17 **Q. What is the “minimum bill” as that term is used in the Shared Solar Program?**

18 A. The Shared Solar Statute defines “minimum bill” as “an amount determined by the
19 Commission under subsection D that subscribers are required to, at a minimum, pay on
20 their utility bill each month after accounting for any bill credits.” In other words, the
21 minimum bill is the least amount that Program participants must pay on their monthly
22 bill, even after generation credits are applied, to pay for certain services provided by the
23 Company to subscribers.

1 **Q. What is the statutory basis for including a minimum bill as part of the Shared Solar**
2 **Program?**

3 A. One of the requirements of the Program directed by statute is that “[t]he Commission
4 shall establish a minimum bill,” and the Statute directs that “[e]ach subscriber shall pay a
5 minimum bill.” By law, the minimum bill may be modified over time and low-income
6 customers are exempt from paying it.

7 With respect to the costs to be included in the minimum bill, the Statute states that the
8 minimum bill must include “the costs of all utility infrastructure and services used to
9 provide electric service and administrative costs of the Shared Solar Program.”

10 Furthermore, “[i]n establishing the minimum bill, the Commission shall (i) consider
11 further costs the Commission deems relevant to ensure subscribing customers pay a fair
12 share of the costs of providing electric services; and (ii) minimize the costs shifted to
13 customers not in a shared solar program.”

14 **Q. Has the Commission enacted regulations that further address the composition of the**
15 **minimum bill?**

16 A. Yes. On December 23, 2020, the Commission adopted regulations – 20 VAC 5-340-10,
17 *et seq.* – to implement the Shared Solar Statute and establish the Program (“Rules”).
18 Section 80 of the Rules specifically addresses minimum bill composition. It restates the
19 language of the Statute – that the minimum bill is to be comprised of “all utility
20 infrastructure and services used to provide electric service and administrative costs of the
21 shared solar program.” Subsection A 2 of Rule 80 further provides that these costs “shall
22 be limited to such costs as determined by the Commission to be just and reasonable based
23 on evidence provided by the parties to the evidentiary hearing process. Such costs must

1 reflect incremental costs of the shared solar program and not otherwise recovered by the
 2 utility from participating customers.”

3 The Rule provides factors which “shall be considered by the Commission in determining
 4 whether costs proposed by the utility are incremental to the Shared Solar Program and
 5 eligible for inclusion in the minimum bill.” These factors are as follows:

- 6 A. The extent to which the costs are utility infrastructure and services used to
 7 provide electric service for the shared solar program;
- 8 B. The extent to which the costs are administrative costs of the shared solar program;
- 9 C. Whether including the cost in the minimum bill is necessary to ensure subscribing
 10 customers pay a fair share of the costs of providing electric services to the
 11 subscribers;
- 12 D. Whether including the cost in the minimum bill will minimize the costs shifted to
 13 customers not in a shared solar program; and
- 14 E. Whether including the costs in the minimum bill is otherwise consistent with the
 15 requirements of § 56-594.3 of the Code of Virginia.

16 **Q. Do the Shared Solar Statute or the Rules speak to the purpose of the minimum bill?**

17 A. Yes. Both the Statute and the Rules emphasize that the purpose of the minimum bill is to
 18 promote fairness by ensuring that subscribing customers pay their fair share of the costs
 19 of the Program, and conversely, safeguard non-participating customers from bearing
 20 shifted Program costs.

21 **Q. How will the minimum bill components and amounts be determined?**

22 A. Rule 80 states that “[t]he Commission shall convene a proceeding to determine any
 23 monthly administrative charge and the components of the minimum bill.” The
 24 Commission’s July 23, 2021 Order for Notice and Hearing set a hearing in this docket, in
 25 part, to establish the minimum bill.

1 **B. Company's Minimum Bill Proposal**

2 **Q. Before you describe the Company's minimum bill proposal and its components,**
3 **please outline the Company's general rationale in developing its proposal.**

4 **A.** Because the Shared Solar Program largely functions as a companion to a subscriber's
5 Principal Tariff, the minimum bill is an essential feature of the Program. Subscribers in
6 the Shared Solar Program will continue to purchase their electric service from the
7 Company in accordance with their individual, Commission-approved Principal Tariff but
8 the subscriber will now receive a credit on their bill for this companion service under the
9 Program.

10 The operability and long-term viability of the Program depends on the utility's electric
11 supply and delivery infrastructure, generation balancing service, and program
12 administration, including administrative billing support systems. While the Program is
13 intended to provide generation credits to offset some of the participating customers'
14 generation supply, the Program will not satisfy all of subscribers' electric needs.
15 Participants will still rely on utility services that carry considerable costs that all utility
16 customers are required to pay.² These are the same utility services the participants relied
17 on before they subscribed and will rely on as a Program participant or Subscriber. If
18 subscribing customers are exempted from these costs, such costs would be shifted to
19 other utility customers who are not participating in the Program. An appropriately
20 comprehensive minimum bill is a reasonable means to ensure that participating customers
21 pay for the costs of utility services they will be consuming, even as they receive

² Unless exempted by statute or Commission Order.

1 generation credits through the Program. Appropriately defining the parameters of the
2 minimum bill is the only safeguard against unfair cost-shifting to non-participating
3 customers.

4 **Q. Can you explain how the minimum bill will impact the Company's billing**
5 **calculations and the bill subscribers receive from the Company?**

6 A. Yes. First, as I described above, participating customers will continue to be billed for
7 their metered usage for their account at the Commission approved rates of their Principal
8 Tariff.

9 Second, a bill credit will be calculated by multiplying the subscriber's portion of the
10 kilowatt-hour ("kWh") electricity production of the shared solar facility (the subscriber's
11 subscription in the Program) by the bill credit rate. This credit will be provided through a
12 companion tariff to the Principal Tariff. The Shared Solar Statute defines "Subscription"
13 as "a contract or other agreement between a subscriber and the owner of a shared solar
14 facility. A subscription shall be sized such that the estimated bill credits do not exceed
15 the subscriber's average annual bill for the customer account to which the subscription is
16 attributed."

17 Finally, a minimum bill would be calculated for the Program and will also be part of the
18 companion tariff for the Program. The Company's proposal is such that the minimum
19 bill discussed herein is based upon the amount of subscription that is credited to a
20 Subscriber in a given billing period.

21 The Company's proposal is to apply the minimum bill against the bill credit in a given
22 billing period to determine a net bill credit. To the extent that part of the net bill credit

1 exceeds the customer's bill for their Principal tariff, the excess will be carried over to a
2 future billing period in accordance with 20 VAC 5-340-60 F.

3 **Q Can you explain the cost components that are included in the Company's minimum**
4 **bill proposal?**

5 A. Yes. There are three components that capture the Company's costs in supporting the
6 Shared Solar Program: (1) Delivery Charges; (2) Generation Balancing Service Charge;
7 and (3) Administrative Charges. Together, these comprise the "costs of all utility
8 infrastructure and services used to provide electric service and administrative costs of the
9 Shared Solar Program," as directed by the Shared Solar Statute to be included in the
10 minimum bill.

11 *1. Delivery Charges*

12 **Q. The first component you mentioned is "Delivery Charges." Please describe this cost**
13 **component.**

14 A. The Delivery Charges component captures the costs of utilizing Company transmission
15 and distribution infrastructure to deliver electricity to customers. For this component, the
16 Company proposes that Program customers pay similar transmission and distribution
17 charges as non-participating customers pay under their Principal Tariff since they will use
18 the electric grid in the same way after they enrolled in the Program as they did before
19 enrollment.

20 Since the Statute directs the development of a bill credit based upon average costs of
21 utility service for each of the classes, the Company proposes to use an average
22 methodology for identifying the components of the minimum bill for each class. More

1 specifically, the Company proposes to utilize class average delivery charges based upon
2 revenues from FERC Form 1, functionalized in accordance with the previous year's COS
3 study for the Virginia jurisdictional classes to determine the transmission and distribution
4 components of the minimum bill. Multiplying this average cost of transmission and
5 distribution by the kWh amount of the shared solar subscription applied to a customer's
6 bill in a given month would effectively charge the Subscribers for these delivery services
7 at a rate the average non-participant paid in the previous calendar year.

8 **Q. Why is the Company proposing to include Delivery Charges as a component of the**
9 **minimum bill?**

10 A. The Delivery Charges component would charge customers for the costs of utilizing
11 Company transmission and distribution infrastructure to deliver electricity to customers
12 that are not provided through the Shared Solar Program, but that are essential for
13 continued electric service. A fundamental policy objective undergirding the minimum
14 bill is that Shared Solar customers bear the cost of utility services they receive. The
15 Shared Solar Program will operate by means of a crediting system whereby the solar
16 generation resource will produce energy that will be sold into the grid, with the value of
17 that energy credited back to participating customers. The Program does not have its own
18 delivery component, nor, as a value crediting scheme, does it need one. For subscribing
19 customers, electricity must be delivered to them via utility transmission and distribution
20 infrastructure in the same way as if they were not a Shared Solar subscriber. Program
21 customers should not pay less than non-participants for the same unbundled services.

22 Table 1 identifies the proposed Distribution and Transmission components by revenue
23 class:

Table 1: Distribution and Transmission Components by Revenue Class

Minimum Bill Component	Residential	Commercial	Industrial
Distribution Service (\$/kWh)	0.02732	0.01125	0.00471
Transmission Service (\$/kWh)	0.01989	0.00983	0.00769

Based on 2020 FERC Form 1 VA JUR information

These components, like the bill credit, will change annually.

Q. Is there a legal basis to include Delivery Charges as a component of the minimum bill?

A. Yes. The General Assembly identified “costs of all utility infrastructure and services used to provide electric service” as a proper component of the minimum bill. These charges also meet the Commission’s definition for “incremental costs” under the factor test in Rule 80 A 2 of the Commission’s regulations:

- Factor (A): Delivery services constitute “utility infrastructure and services used to provide electric service for the shared solar program.” The Program has no delivery component, so this service is essential for customers to receive electricity.
- Factor (C): If the costs of subscribing customers’ delivery service are not included in the minimum bill, they will be borne by non-participating customers. Inclusion of these charges in the minimum bill is the only means to ensure “subscribing customers pay a fair share of the costs of providing electric services to the subscribers” and therefore “minimize the costs shifted to customers not in a shared solar program,” consistent with Va. Code § 56-594.3. D.
- Factor (D): As I noted previously, exempting subscribing customers from paying the costs of their energy delivery service will result in those costs being “shifted to customers not in a shared solar program.”

1 subscribing customers 100% of the time, which necessarily includes developing,
2 operating, generating, and purchasing enough energy to serve these customers, regardless
3 of their participation in the Shared Solar Program. Including generation balancing to
4 account for the costs of doing this as a component of the minimum bill is consistent with
5 the focus of Va. Code § 56-594.3 D.

6 **Q. How would the Generation Balancing Service Charge be calculated?**

7 A. To calculate the Generation Balancing Service Charge rate of the minimum bill, the
8 Company proposes to net the total of the customer's electricity supply generation costs
9 (including non-bypassable charges), as a non-participant would pay, against the avoided
10 cost value. However, the Generation Balancing Service Charge rate component of the
11 minimum bill can never be less than the applicable non-bypassable charges, if applicable.

12 **Q. Can you explain what non-bypassable charges would be included in this component**
13 **of the minimum bill?**

14 A. Yes. The Virginia Clean Economy Act ("VCEA") and other state law make certain costs
15 non-bypassable for all utility customers, unless specifically exempted. Shared Solar
16 Program customers are subject to these charges, and the Company proposes to include the
17 charges in the generation component of the minimum bill, as is the case with all other
18 customers. This avoids creation of an adverse incentive for customers to join a Shared
19 Solar Program as a means of evading required non-bypassable charges, and prevents
20 cost-shifting to the Company's remaining customers. The Company proposes to include
21 any and all non-bypassable charges as specified in, and required by, the Virginia Code
22 and approved by the Commission, both now and in the future. This includes, but is not
23 limited to, Rider CE, Rider RPS, Rider PPA (as proposed by Staff in the Rider RPS

1 proceeding), and Rider CCR.

2 As I noted above, for calculation purposes, the customer's electricity supply generation
3 costs (including non-bypassable charges) would be netted against the subscriber's
4 avoided cost benefit credit to determine the amount owed. However, because non-
5 bypassable charges are, by law, non-bypassable (except where exempted), the Generation
6 Balancing Service Charge component of the minimum bill can never be less than the non-
7 bypassable charges.

8 **Q. How does the Company plan to determine the avoided cost credit?**

9 A. The Company proposes to structure the avoided cost credits to include a forecasted
10 energy credit as well as a credit based on the market value of the capacity benefit
11 provided to the system by the Shared Solar generating facility. The avoided cost credits
12 would be reset annually using forecasting methods for PJM Interconnection, LLC
13 ("PJM") energy and capacity prices consistent with those used in the Company's annual
14 Fuel Factor filing. Specifically, energy prices would be forecasted using market curves
15 for PJM Dominion Zone day-ahead locational marginal pricing, and capacity prices
16 would be based on the results of the applicable Base Residual Auctions ("BRA") for
17 capacity resources. The Company proposes to provide existing and prospective
18 participants 90 days' notice of the updated avoided cost credits.

19 **Q. Mr. Trexler, given what you have just described, can you provide a representative
20 example of how the Generation Balancing Charge calculation would be conducted?**

21 A. Yes. Using recent pricing (6/1/21-5/31/22 forecast), the following is a model for how the
22 Company would calculate the Shared Solar Generation Balancing Charge:

Generation Service Charge:

The numbers in Table 2 below represent 2020 data provided in FERC Form 1, functionalized in accordance with the 2020 COS study, for the Virginia jurisdiction. This information would change from year-to-year, but for 2020, the proposed Generation Service Charge by revenue class would be as follows:

Table 2: Generation Service Rates by Revenue Class

Description	Residential	Commercial	Industrial
Generation Service (\$/kWh)	0.07044	0.05012	0.04661

Based on 2020 FERC Form 1 VA JUR information

Avoided Cost Credit:

- Energy:
 - Forecasted On-Peak DOM Zone Price (for 6/1/21 – 5/31/22)
 - **\$35.34/MW (3.534 cents/kWh)**
- Capacity:
 - \$140.00/MW-day (actual BRA result for 6/1/21 – 5/31/22)
 - Assume 34.4% solar value for capacity = \$48.16/MW-day
 - Assume 25% capacity factor for solar in a day for 1 MW: 1 MW x 24 hrs
x 25% = 6 MWH/day on average
 - \$48.16/MW-day / 6 MWH/day = **\$8.03/MWH (0.803 cents/kWh)**
- Total Avoided Cost Credit Pricing:
 - Energy: \$35.34/MW (3.534 cents/kWh)
 - + Capacity: \$8.03/MWH (0.803 cents/kWh)
 - Total: 4.337 cents/kWh**

1 The Generation Balancing Service Charge nets the customer's Generation Service Charge
 2 against the avoided cost price calculation. The difference is then multiplied by the
 3 amount of the customer's subscription to determine the minimum bill. For a residential
 4 customer the calculation would be as follows:

5	Generation Service Charge: ³	7.044 cents/kWh
6	Avoided Cost Credit price:	<u>(4.337 cents/kWh)</u>
7	Generation Balancing Service Charge:	2.707 cents/kWh

8 In the above example, the rate for the Generation Balancing Service Charge for a
 9 residential customer would be 2.707 cents per kWh.

10 **Q. How does the Generation Balancing Service Charge comply with the legal**
 11 **requirements for the minimum bill?**

12 A. If we apply the factor test the Commission set forth in Rule 80 A 2 of its regulations, it is
 13 clear the Generation Balancing Service Charge is an incremental cost of the Program that
 14 should be included in the minimum bill.

- 15 • Factor (A): The solar generation in the Program is insufficient on its own to meet
 16 100% of subscriber's energy needs on a continuous basis. The Company's
 17 generation balancing service is, therefore, a "utility . . . service used to provide
 18 electric service for the shared solar program." The Program could not exist
 19 without it, and it is a cost to subscribers, as the users of that energy, should bear.
- 20 • Factors (C) and (D): The components of the Generation Balancing Service
 21 Charge are certain to be incurred, and the Program does not provide another cost

³ Based upon Table 2 for a residential customer.

1 recovery mechanism by which to capture them. If they are not included in the
2 minimum bill, they will be shifted to non-participating customers.

3 **C. Administrative Charges**

4 **Q. The final cost component of the minimum bill you mentioned was “Administrative**
5 **Charges.” Please explain this component.**

6 A. Administrative costs are incremental costs associated with the utility’s administration of
7 the Shared Solar Program. Both the Statute and the Commission’s regulations identify
8 “administrative costs” as a category of costs to be included in the minimum bill. The
9 Company will incur a variety of costs to administer the Program. These costs include
10 technology development, workforce expansion, and billing preparation and coordination
11 services, among others. For example, the Company previously estimated these costs to
12 total approximately \$302,300 per year, to be incurred beginning on the effective date of
13 the Shared Solar program. These costs include full time salary and benefits for one
14 program manager and one business performance analyst, grossed up to 2023 dollars, who
15 will work in support of the Program.

16 Moreover, the Company is tasked with providing customer bills, and calculating and
17 providing applicable bill credits in cooperation with subscriber organizations. The
18 Company intends to utilize its forthcoming customer information platform (“CIP”) to
19 automate this process to the greatest extent possible, but elements of the Program may
20 require specialized program configuration or ongoing manual processes to comply with
21 Program requirements. To the extent the CIP must be altered to accommodate the
22 Program, these incremental costs would be included in the administrative charge of the
23 minimum bill. Also, at this early stage, data transfer protocols have also not been

1 established with subscriber organizations. The costs associated with some of these
2 variables are uncertain at this time, but to the extent there are incremental costs
3 attributable to the Program, such costs would be included in the administrative charge to
4 be borne by subscribing customers.

5 **Q. With the understanding that some of the administrative charges of the Program are**
6 **still in the development stage, can you provide a high-level estimate of the expected**
7 **administrative charges?**

8 A. At this time, we can only estimate what it might cost to manually bill a customer,
9 including reviewing the subscriber organization's list of subscriptions, if there are limited
10 participants. However, if the program reaches 150MW—or potentially 200MW—and
11 largely serves residential customers, then manual billing and handling will not be tenable
12 and the automation provided by the CIP will be critical.

13 **Q. Now that you have identified all of the components, how is the minimum bill**
14 **calculated?**

15 A. For the Distribution, Transmission, and Generation Balancing Service Charge
16 components of the minimum bill, the Company would multiply the rates identified above
17 by the kWh of subscription that is utilized for calculation of the bill credit for the
18 particular billing period to determine the minimum bill.

19 Since the Administrative Charges have not been fully developed at this time, it would be
20 premature to identify whether they would be a monthly charge or a kWh charge. The
21 Company proposes that the Administrative Charges be finalized in the Company's filing
22 of the actual Program tariff.

1 **Q. Has the Company estimated a typical minimum bill for a residential customer,**
 2 **assuming a 1,000 kWh subscription?**

3 A. Yes. Following the Company's proposed approach above to utilize class average
 4 charges based upon revenues from FERC Form 1, functionalized in accordance with the
 5 previous year's COS study for the Virginia jurisdictional classes for determining the
 6 distribution, transmission and generation service charges that the Company proposes to
 7 use (along with the avoided cost credit but not including the administrative charge) in the
 8 minimum bill, the Company estimates that a subscribing residential customer purchasing
 9 1,000 kWh of shared solar generation should receive a minimum bill of approximately
 10 \$74.28, broken down as shown below. As stated before, subscribing customers with
 11 lower usage can expect to pay a proportionally smaller minimum bill under the
 12 Company's proposal.

13 For a Residential Customer with a 1,000 kWh Subscription:

14	Distribution Service Charge:	\$27.32	or 2.732 cents/kWh
15	Transmission Service Charge:	\$19.89	or 1.989 cents/kWh
16	<u>Generation Balancing Service Charges:</u>	<u>\$27.07</u>	<u>or 2.707 cents/kWh</u>
17	Total Minimum Bill (1,000 kWh):	\$74.28 ⁴	or 7.428 cents/kWh

⁴ This calculation is based on revenues from FERC Form 1, functionalized in accordance with the previous year's COS study for the Virginia jurisdiction. It also assumes that the Generation Balancing Service Charge exceeds the cost of non-bypassable charges. This calculation excludes the Administrative Charge, which is to be determined at a later date.

1 **Q. You mentioned that a smaller subscription would result in a proportionally smaller**
 2 **minimum bill. Can you provide some examples?**

3 A. Yes. Table 3 below illustrates (i) the total bill amount for a residential customer; (ii) the
 4 bill credit amount, (iii) the minimum bill; and (iv) the total bill amount for a participating
 5 residential customer at varying subscription levels:

6 **Table 3: Examples of Subscription Size Impact on Minimum Bill**

Typical Residential Customer Using 1,000 kWh				
Shared Solar Subscription Level (kWh)	DEV Bill Amount (\$)	Bill Credit (\$)	Minimum Bill (\$)	Total Bill (\$)
1,000	\$117.96	(\$117.65)	\$74.28	\$74.59
700	\$117.96	(\$82.35)	\$51.99	\$87.60
500	\$117.96	(\$58.83)	\$37.14	\$96.27
300	\$117.96	(\$35.30)	\$22.29	\$104.95
100	\$117.96	(\$11.77)	\$7.43	\$113.62

Notes:

- 1) Low-income Customers are exempt from the Minimum Bill components, except for non-bypassable charges.
- 2) Excludes Sales and Use Tax, Consumption Tax, Local Utility Tax.
- 3) Includes Non-bypassable Rider CE, Rider PIPP and Rider RPS.
- 4) Minimum bill does not include Administrative Charges that will be determined at a later date.

7 **Q. Subsection D of the Shared Solar Program Statute provides that low-income**
 8 **customers will be exempt from the minimum bill. How does the Company plan to**
 9 **recover costs associated with these customers' participation in the Program?**

10 A. The Company recognizes that low-income customers, as defined by the Commission, will
 11 be exempt from all components of the minimum bill outlined above (except non-
 12 bypassable charges). The Company proposes that costs associated with low-income
 13 customers' participation in the Program be recovered through the Fuel Factor.

1 **Q. Is Commission approval required to recover these costs through the Fuel Factor?**

2 A. Yes. 20 VAC 5-340-60 G 2 states that “[c]osts associated with [low-income] customers’
3 participation shall be recovered by the utility in a manner to be determined by the
4 commission in the proceeding set forth in 20 VAC 5-340-80.” Consistent with the
5 Commission’s requirement in 20 VAC-340-60 F 6 that bill credits associated with the
6 Shared Solar Program be applied through the Company’s Fuel Factor, the Company
7 seeks the Commission’s approval in this case to recover costs associated with low-
8 income customers’ participation in the Program through the Fuel Factor, as low-income
9 customers’ bill credits are applied through the Fuel Factor but low-income customers are
10 exempt from the minimum bill.

11 **Q. Does this conclude your pre-filed direct testimony?**

12 A. Yes, it does.

Shared Solar Program Workpapers
Case No. PUR-2020-00125

SHARED SOLAR PROGRAM BILL CREDIT AND MINIMUM BILL WORKPAPER

Revenues	Distribution	Transmission	Generation	Total
Residential	\$ 811,682,979.81	\$ 591,099,599.18	\$ 2,093,131,270.01	\$ 3,495,913,849.00
Commercial	\$ 359,114,026.92	\$ 314,015,554.10	\$ 1,600,584,317.98	\$ 2,273,713,899.00
Industrial	\$ 23,051,052.74	\$ 37,601,879.06	\$ 227,906,835.21	\$ 288,559,767.00
Total	\$ 1,193,848,059.46	\$ 942,717,032.34	\$ 3,921,622,423.20	\$ 6,058,187,515.00

Sales	Total
Residential	29,714,750,000
Commercial	31,932,404,000
Industrial	4,889,832,000
Total	66,536,986,000

Average Price (cents/kWh)	Distribution	Transmission	Generation	Total
Residential	2.732	1.989	7.044	11.765
Commercial	1.125	0.983	5.012	7.120
Industrial	0.471	0.769	4.661	5.901

Notes:

Revenues and Sales from FERC Form 1 Annual Financial and Operating Report VA JUR pg. nos. 300 and 301, functionalized based on 2020 Cost of Service Study.

VIRGINIA ELECTRIC AND POWER COMPANY
 AVERAGE AND EXCESS STUDY - INCLUSIVE FACTORS
 ECP - PERIOD ENDED DECEMBER 31, 2020

SCHEDULE 2

SCHEDULE 2 - REVENUE

Line #	Function Total	Production	Transmission	Distribution	Allocation Basis
1	3,497,212,051	2,093,910,676	891,319,703	811,981,271	Direct
2	2,273,714,025	1,600,584,406	314,015,271	359,114,047	Direct
3	0	0	0	0	Direct
4	288,559,760	277,206,830	37,091,878	23,051,052	Direct
5	0	0	0	0	Direct
6	0	0	0	0	Direct
7	0	0	0	0	Direct
8	0	0	0	0	Direct
9	0	0	0	0	Direct
10	0	0	0	0	Direct
11	0	0	0	0	Direct
12	0	0	0	0	Direct
13	0	0	0	0	Direct
14	0	0	0	0	Direct
15	0	0	0	0	Direct
16	0	0	0	0	Direct
17	0	0	0	0	Direct
18	0	0	0	0	Direct
19	0	0	0	0	Direct
20	0	0	0	0	Direct
21	0	0	0	0	Direct
22	0	0	0	0	Direct
23	0	0	0	0	Direct
24	0	0	0	0	Direct
25	6,057,869,387	3,930,781,814	942,937,153	1,194,150,320	Direct
26	0	0	0	0	Direct
27	2,458,695	2,458,695	0	0	SCHED - 75/line 57
28	55,176,277	55,176,277	0	0	SCHED - 75/line 56
29	177,281	177,281	0	0	SCHED - 75/line 52
30	0	0	0	0	Direct
31	57,812,703	57,812,703	0	0	Direct
32	0	0	0	0	Direct
33	0	0	0	0	Direct
34	6,115,681,490	3,978,594,017	942,937,153	1,194,150,320	Direct
35	0	0	0	0	Direct
36	0	0	0	0	Direct
37	4,072,791	2,635,597	632,850	802,444	RATE_REVENUE
38	14,071,282	0	0	14,071,282	Direct
39	23,373,579	0	0	23,373,579	MISC_SERV_REV
40	0	0	0	0	Direct
41	2,041	2,041	0	0	FACTORS
42	5,170,212	0	5,170,212	0	PLANT_ACT_IG4
43	4,756,244	0	4,756,244	0	FACTORS
44	1,854,911	1,854,911	0	0	TOTAL_PLANT
45	3,834,658	1,854,911	5,093,886	6,394,137	TOTAL_PLANT
46	0	0	0	0	FACTORS
47	28,682	0	28,682	0	FACTORS
48	6,484,619	6,484,619	0	0	FACTORS
49	0	0	0	0	Direct
50	0	0	0	0	Direct
51	0	0	0	0	Direct
52	0	0	0	0	Direct
53	0	0	0	0	Direct
54	0	0	0	0	Direct
55	15,155,505	7,488,630	2,902,881	4,764,015	OUTPUT Template-Rtg & Comp -1
56	437,086	437,086	0	0	OUTPUT Template-Rtg & Comp -1
57	8,725,245	8,725,245	0	0	OUTPUT Template-Rtg & Comp -1
58	0	0	0	0	FACTORS
59	0	0	0	0	FACTORS
60	0	0	0	0	FACTORS
61	0	0	0	0	FACTORS
62	0	0	0	0	FACTORS
63	0	0	0	0	FACTORS
64	0	0	0	0	FACTORS
65	0	0	0	0	FACTORS
66	597,741	597,741	0	0	FACTORS
67	0	0	0	0	FACTORS
68	0	0	0	0	FACTORS
69	0	0	0	0	FACTORS
70	0	0	0	0	FACTORS
71	0	0	0	0	FACTORS
72	30,484,146	33,713,320	2,531,543	3,819,283	OUTPUT Template-Rtg & Comp -1
73	59,340,075	78,276,794	8,599,339	22,714,378	OUTPUT Template-Rtg & Comp -1
74	0	0	0	0	Direct
75	6,175,272,515	4,006,420,286	951,536,532	1,218,664,698	Direct
76	0	0	0	0	Direct
77	0	0	0	0	Direct
78	0	0	0	0	Direct

Shared Solar - Avoided Cost Credit Workpapers

210940881

<u>Line</u>	<u>Solar Unit</u>	<u>Units</u>	<u>6/1/2021-5/31/22</u>
1	Installed Capacity	MW	1.000
2	Capacity Credit	%	34.4%
3	Firm Capacity [Line 1 x Line 2]	MW	0.344
4	Capacity Factor	%	25.0%
5	Generation [Line 1 x Line 4 x 8.76]	GWh	2.19
6	Fwd On-Pk Energy Price	\$/MWh	35.34
7	Solar Energy Value	\$/MWh	35.34
8	Fwd Capacity Price	\$/kW/yr	51.10
9	Solar Capacity Value [Line 3 x Line 8/Line 5]	\$/MWh	8.03
10	Energy+Capacity Value [Line 7 + Line 9]	\$/MWh	43.37
11	Capacity Planning Year		<u>6/1/2021-5/31/22</u>
12	RPM RTO Auction Price	\$/MW/day	140.00
	[Line 12 * 365/1000]	\$/kW/yr	51.10
13	Calendar Year		<u>6/1/2021-5/31/22</u>
		\$/kW/yr	51.10

FERC Form 1
Annual Financial and Operating
Report - VA Jurisdiction
Year Ended December 31, 2020

21065-0129

ELECTRIC OPERATING REVENUES (Account 400)

1. Report below operating revenues for each prescribed account, and manufactured gas revenues in total.
 2. Report number of customers, columns (f) and (g), on the basis of meters, in addition to the number of flat rate accounts; except that where separate meter readings are added for billing purposes, one customer should be counted for each group of meters added. The average number of customers means the average of twelve figures at the close of each month.
 3. If increases or decreases from previous year are not derived from previously reported figures, please explain any inconsistencies in a footnote.

Line No.	Title of Account (a)	OPERATING REVENUES	
		Amount for Year (b)	Amount for Previous Year (c)
1	Sales of Electricity		
2	(440) Residential Sales	\$3,495,913,849	\$3,476,995,570
3	(442) Commercial and Industrial Sales		
4	Small (or Commercial) (See Instr. 4)	2,273,713,899	2,635,118,228
5	Large (or Industrial) (See Instr. 4)	288,559,767	353,932,267
6	(444) Public Street and Highway Lighting	-	-
7	(445) Other Sales to Public Authorities	-	-
8	(446) Sales to Railroads and Railways	-	-
9	(448) Interdepartmental Sales	-	-
10	TOTAL Sales to Ultimate Consumers	6,058,187,515	6,466,046,065
11	(447) Sales for Resale		
12	TOTAL Sales of Electricity	6,058,187,515	6,466,046,065
13	(Less) (449.1) Provision for Rate Refunds	0	(357,105)
14	TOTAL Revenue Net of Provision for Refunds	\$6,058,187,515	\$6,466,403,170
15	Other Operating Revenues		
16	(450) Forfeited Discounts	-	-
17	(451) Miscellaneous Service Revenues	-	-
18	(453) Sales of Water and Water Power	-	-
19	(454) Rent from Electric Property	-	-
20	(455) Interdepartmental Rents	-	-
21	(456) Other Electric Revenues	-	-
22	(456.1) Revenues from Transmission of Elec of Others	-	-
23			
24			
25			
26	TOTAL Other Operating Revenues	-	-
27	TOTAL Electric Operating Revenues	\$6,058,187,515	\$6,466,403,170

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ELECTRIC OPERATING REVENUES (Account 400) (Continued)

4. Commercial and Industrial Sales, Account 442, may be classified according to the basis of classification (Small or Commercial, and Large or Industrial) regularly used by the respondent if such basis of classification is not generally greater than 1000 Kw of demand. (See Account 442 of the Uniform System of Accounts. Explain basis of classification in a footnote).

5. See page 108, Important Changes During Year, for important new territory added and important rate increases or decreases.

6. For lines 2, 4, 5, and 6, see page 304 for amounts relating to unbilled revenue by accounts.

7. Include unmetered sales. Provide details of such sales in a footnote.

MEGAWATT HOURS SOLD		AVERAGE NUMBER OF CUSTOMERS PER MONTH		Line No.
Amount for Year (d)	Amount for Previous Year (e)	Number for Year (f)	Number for Previous Year (g)	
29,714,750	29,829,092	2,277,356	2,245,173	1
31,932,404	34,471,638	230,751	229,187	2
4,889,832	5,591,450	577	588	3
				4
				5
				6
				7
				8
				9
66,536,986	69,892,180	2,508,684	2,474,948	10
				11
66,536,986	69,892,180	2,508,684	2,474,948	12
				13
66,536,986	69,892,180	2,508,684	2,474,948	14

** Line 12, Column (b) includes \$189,594,812 of unbilled revenues.

*** Line 12, Column (d) includes 2,418,107 MWH relating to unbilled revenues.

CERTIFICATE OF SERVICE

I hereby certify that on this 21st day of September 2021, a true and accurate copy of the foregoing filed in Case No. PUR-2020-00125 was delivered by hand, email or mail first class postage pre-paid to the following:

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